

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph at page 1, lines 4-9 with the following paragraph:

This application claims priority from U.S. Provisional Patent Application No. 60/414,821 filed on September 30, 2002 for "Method Fabricating Magnetic Storage Media Having Tilted Anisotropy". The present application is related to concurrently filed applications: Serial No. 10/673,795, "System, Method and Aperture for Oblique Deposition"; and Serial No. 10/673,746, "System, Method and Collimator for Oblique Deposition".

Please replace the paragraph at pages 15 and 16; page 15: lines 20-29; page 16: lines 1-9 with the following paragraph:

Sample media B differs from sample media A in that magnetic material layer 68 is not oblique deposited, resulting in grain growth perpendicular relative to the substrate surface as shown in the electron micrograph of FIG. 5. Sample media B of FIG. 5 has first seedlayer 44 of Ta deposited onto substrate 40. The Ta seedlayer is followed by a second seedlayer 46 of Ru. The first seedlayer 44 is oblique deposited at 65°. Second seedlayer 46 of Ru is also oblique deposited in the same directionality as first seedlayer 44 at an angle of 65° from normal. In contrast to sample media A, magnetic material layer 68 of sample media B is not oblique deposited. One method for non-oblique deposition is to rotate the wafer during the deposition of the magnetic material layer 68. The magnetic material layer 68 is formed of CoPtCr. As shown in FIG. 5, the magnetic material layer 68 shows perpendicular grain growth. Sample media B shown in FIG. 5 uses three equal layer thicknesses of 20 nanometers (200 Å), similar to sample media A. As with sample media A, layers at that thickness are not required and as previously discussed are preferably thinner. For example, first seedlayer 44 with a thickness of 25 Å, second seedlayer 46 with a thickness of 5 Å and magnetic material layer ~~[[48]]~~ 68 with a thickness of 50 Å are also suitable for magnetic media consistent with the present invention.

Please replace the paragraph at page 16, lines 10-29 with the following paragraph:

X-Ray Diffraction (XRD) data, presented in FIGS. 6, 7 and 8, demonstrate that sample media A and sample media B both result in a tilting of the C-axis in the magnetic material layer, despite the different methods used to deposit magnetic material layers 58 and 68 respectively. The XRD “pole figure” technique presented on these graphs is capable of resolving the orientation of a specific crystallographic direction with respect to the sample normal. For comparison a control media was produced where the same layers and composition were used but all layers, seedlayers, and magnetic material layer, were non-oblique deposited. In FIG. 6, the XRD data for the control media shows peak intensity contour lines, which correspond to the C-axis orientation 70 centered around the graph origin 72, indicating perpendicular or normal growth. In FIG. 7, showing XRD data for sample media A, the C-axis peak contour lines 74 are shifted off of graph origin 72 indicating a tilting of the C-axis by 33° in sample media A. The XRD data shown in FIG. 8 for sample media B, shows the C-axis peak contour lines 76 shifted off of graph origin 72, indicating a tilting of the C-axis by 28° in sample media B. The XRD data for sample media A B shown in FIG. 8 is of special interest because the CoPtCr layer was non-oblique deposited. In the non-oblique deposited magnetic material layer 68 of sample media B, the grains are perpendicular and yet the resulting C-axis is tilted to 28° from the surface normal.

Please replace the paragraph at page 18, lines 1-8 with the following paragraph:

The high squareness of M_x loop 88 and vanishing M_y loop 90 shown in FIG. 9b[[,]] demonstrate the anisotropy energy minima present when the easy axis is aligned with the applied field. M_x loop 88 and M_y loop 90 of FIG. 9b show that the easy axis (the magnetic anisotropy) of magnetic material layer 58 is tilted approximately 50° away from the sample surface normal. The degree of tilt of the magnetic anisotropy with respect to the surface normal is larger than the degree of tilt of the C-axis due to the demagnetization torque pulling the magnetization into the plane of the thin film.

Please replace the paragraph at page 19, lines 18-25 with the following paragraph:

The tilted magnetic media of the present invention may be additionally customized for optimal performance. The tilted C-[[axes]] axis and/or the tilted magnetic anisotropy of the magnetic media of the present invention may be further organized into patterns, for example, unidirectional, circumferential or radial patterns. The orientation of the C-axis and orientation of the tilted magnetic anisotropy are maintained with the well-defined angle and control of directionality as described herein, while organization of the orientations occurs into a pattern.

Please replace the paragraph at page 20, lines 21-25 with the following paragraph:

The circumferential or radial patterns may be created as disclosed in applications: Serial No. 10/673,795, "System, Method and Aperture for Oblique Deposition"; and Serial No. 10/673,746, "System, Method and Collimator for Oblique Deposition". The above applications are filed concurrently with the present application and incorporated herein by reference.